

From the INTERNATIONAL BUREAU

PCTNOTIFICATION CONCERNING
TRANSMITTAL OF COPY OF INTERNATIONAL
PRELIMINARY REPORT ON PATENTABILITY
(CHAPTER I OF THE PATENT COOPERATION
TREATY)

(PCT Rule 44bis.1(c))

To:

STEFFEY, Charles, E.
Schwegman, Lundberg, Woessner & Kluth, P.A.
P.O. Box 2938
Minneapolis, MN 55402
ETATS-UNIS D'AMERIQUEDate of mailing (*day/month/year*)
13 July 2006 (13.07.2006)Applicant's or agent's file reference
884.A64WO1**IMPORTANT NOTICE**International application No.
PCT/US2004/043080International filing date (*day/month/year*)
24 December 2004 (24.12.2004)Priority date (*day/month/year*)
31 December 2003 (31.12.2003)

Applicant

INTEL CORPORATION et al

The International Bureau transmits herewith a copy of the international preliminary report on patentability (Chapter I of the Patent Cooperation Treaty)

INTELLEVATEThe International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No. +41 22 338 82 70

JUL 21 2006

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Coded

Authorized officer

e-mail: pt06@wipo.int

Agnes Wittmann-Regis

Schwegman, Lundberg,
Woessner & Kluth, P.A.

JUL 21 2006

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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 884.A64WO1	FOR FURTHER ACTION	See item 4 below
International application No. PCT/US2004/043080	International filing date (<i>day/month/year</i>) 24 December 2004 (24.12.2004)	Priority date (<i>day/month/year</i>) 31 December 2003 (31.12.2003)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant INTEL CORPORATION		

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).																								
2.	This REPORT consists of a total of 9 sheets, including this cover sheet.																								
In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.																									
3.	<p>This report contains indications relating to the following items:</p> <table style="width: 100%;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 40%;">Box No. I</td> <td style="width: 50%;">Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input checked="" type="checkbox"/>	Box No. VIII	Certain observations on the international application
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<input checked="" type="checkbox"/>	Box No. VIII	Certain observations on the international application																							
4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).																								

<p style="text-align: center;">The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No. +41 22 338 82 70</p>	<p>Date of issuance of this report 03 July 2006 (03.07.2006)</p> <p>Authorized officer</p> <p style="text-align: center; font-weight: bold;">Agnes Wittmann-Regis</p> <p>e-mail: pt06@wipo.int</p>
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PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PT06

REC'D 14 OCT 2005

PCT

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/US2004/043080

International filing date (day/month/year)
24.12.2004

Priority date (day/month/year)
31.12.2003

International Patent Classification (IPC) or both national classification and IPC
H04N5/76

Applicant
INTEL CORPORATION

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office - P.B. 5818 Patentlaan 2
NL-2280 HV Rijswijk - Pays Bas
Tel. +31 70 340 - 2040 Tx: 31 651 epo nl
Fax: +31 70 340 - 3016

Authorized Officer

Braga, J

Telephone No. +31 70 340-3866



**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2004/043080

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2004/043080

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	8,12,14-18,30
	No: Claims	1-7,9-11,13,19-29
Inventive step (IS)	Yes: Claims	8,12,14-18,30
	No: Claims	1-7,9-11,13,19-29
Industrial applicability (IA)	Yes: Claims	1-30
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V.

1 Reference is made to the following documents:

- D1 : EP 1 324 604 A (SONY CORPORATION) 2 July 2003 (2003-07-02)
- D2 : US 5 689 647 A (MIURA ET AL) 18 November 1997 (1997-11-18)
- D3 : BROFFERIO S ET AL: "PERFORMANCE EVALUATION OF IMAGE PARTITIONED PROCESSING ON TRANSPUTER NETWORK" PROCEEDINGS OF THE IASTED INTERNATIONAL SYMPOSIUM. APPLIED INFORMATICS, February 1989 (1989-02), pages 183-185, XP000791029
- D4 : WO 99/23817 A (INTEL CORPORATION; DUNTON, RANDY, R; METZ, WERNER; CORUM, CURTIS, A; B) 14 May 1999 (1999-05-14)
- D5 : US 2003/208638 A1 (ABRAMS THOMAS ALGIE ET AL) 6 November 2003 (2003-11-06)

2 INDEPENDENT CLAIM 1

2.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

Document D1 discloses (the references in parentheses applying to this document):

A method comprising:

receiving video (fig. 12; (151);(152)) into a video display device;
storing (fig. 12; (155); (156)), by at least one processor, the video into a memory, upon determining that the video display device is in a storage mode; and performing enhanced image processing (fig. 12; (153)) on the video with the at least one processor, upon determining that the video display device is in an image processing mode.

3 INDEPENDENT CLAIM 9

3.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 9 is not new in the sense of Article 33(2) PCT.

Document D1 discloses (the references in parentheses applying to this document):

An apparatus (fig. 59) comprising:
an input/output interface ([0472]) coupled to a memory (fig. 59; (403)); and
a first programmable processor ([0472]) to perform a first enhanced image processing operation ([0468]) on video if a current mode of the apparatus is an image processing mode, and
wherein the first programmable processor is to store ([0469]) the video into the memory if the current mode of the apparatus is a storage mode.

4 INDEPENDENT CLAIM 19

- 4.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 19 is not new in the sense of Article 33(2) PCT.
Document D1 discloses (the references in parentheses applying to this document):

A system (fig. 12) comprising:

a video tuner (fig. 12; (151)) to receive a signal, wherein the video tuner is to extract an analog video signal at a frequency from the signal;

a video signal processor (fig. 12; (156)) to receive the analog video signal and to convert the analog video signal to a digital video signal;

a double data rate random access memory (fig. 12, (153), (160); fig. 52, (301); [0334]; [0335]); and

a programmable processing unit (fig. 12) having at least one programmable processor (fig. 12; (153)) and a host processor (fig. 12; (171)), wherein the host processor is to configure the at least one programmable processor to compress and store the digital video signal in the DDR RAM (fig. 12, (153); fig. 15; [0138]) if the system is in a storage mode, and wherein the host processor is to configure the at least one programmable processor to perform at least one image processing operation (fig. 12, (153); fig. 15; [0138]) if the system is in an image processing mode.

5 INDEPENDENT CLAIM 23

- 5.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 23 is not new in the sense of Article 33(2) PCT.
Document D1 discloses (the references in parentheses applying to this document):

Similar arguments as put forward at paragraph 2.1 above apply, *mutatis mutandis*, to claim 23.

6 DEPENDENT CLAIMS 2-7, 10, 11, 13, 20, 21, 22, 24-28, 29

Dependent claims 2-7, 10, 11, 13, 20, 21, 22, 24-28, 29 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step (Article 33(2) and (3) PCT).

7 DEPENDENT CLAIMS 8, 12, 30

The combination of the features of dependent claims 8, 12, 30 are neither known from, nor rendered obvious by, the available prior art. The reasons are as follows:

The additional subject-matter of dependent claims 8, 12, 30 generally relates to image enhancement features/methods, and such features/methods are not disclosed or unambiguously derivable from the teachings of D1 or the combination of the teachings of D1 with D2, D3, D4 or D5.

8 INDEPENDENT CLAIM 14

- 8.1 Document D1, which is considered to represent the most relevant state of the art, discloses (the references in parentheses applying to this document):

An apparatus comprising:

a memory (fig.12; (156));

a first programmable processor (fig. 12; (153)) to perform a first enhanced image processing operation on video if a current mode of the apparatus is an image processing mode, and wherein the first programmable processor is to perform a compression operation (fig. 12, (153); fig. 15; [0138]) on the video if the current mode of the apparatus is a storage mode.

From this, the subject-matter of independent claim 14 differs in that it further defines:

a second programmable processor to receive output from the first enhanced image processing operation through a first logical connection that includes a path through a third programmable processor and to perform a second enhanced image processing operation on the video if the current mode of the apparatus is the image processing mode, and wherein

the second programmable processor is to receive output from the compression operation through a second logical connection that includes a path through a fourth programmable processor and to store the video into the memory if the current mode of the apparatus is the storage mode.

- 8.1.1 The subject-matter of claim 14 is therefore novel (Article 33(2) PCT)
The problem to be solved by the present invention may be regarded as "how to efficiently perform image operations using multiple programmable processor".
- 8.1.2 The solution to this problem proposed in claim 14 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons:
- a) the use of logical connections forming a path between a source programmable processor and a destination programmable processor passing through an intermediate programmable processor provides flexible image enhancement and compression possibilities;

- b) D1 uses wireless transmissions with fixed pre-defined direct point-to-point paths to perform multiple image enhancement/compression activities;
- c) it is an alternative solution to having a fixed mesh of paths and using routing operations to transmit data between the network elements as disclosed in D2;
- d) the combination of the teachings of D1 and D2 would not have led to the present invention because both D1 and D2 disclose alternative solutions.

8.1.3 Claims 15-18 are dependent on claim 14 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

Re Item VIII.

1 DEPENDENT CLAIMS 8, 30

- 1.1 The application does not meet the requirements of Article 6 PCT, because **claims 8 and 30** are not clear, since the definition of third processor features is not clear. The negative definition of the third processor's features, in both claims, does not clearly define the scope of the claims. It appears that the third processor is performing a specific function (see description at page 23, lines 16-26). Therefore it appears to be possible to clearly define the function of the third processor using positive features.